



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2010-1204; Directorate Identifier 2010-NM-147-AD; Amendment 39-16931; AD 2012-02-08]**

**RIN 2120-AA64**

**Airworthiness Directives; Aviation Communication & Surveillance Systems (ACSS)**

**Traffic Alert and Collision Avoidance System (TCAS) Units**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** We are adopting a new airworthiness directive (AD) for certain ACSS TCAS units installed on but not limited to various transport and small airplanes. This AD was prompted by reports of anomalies with TCAS units during a flight test over a high density airport. The TCAS units dropped several reduced surveillance aircraft tracks because of interference limiting. This AD requires upgrading software. We are issuing this AD to prevent TCAS units from dropping tracks, which could compromise separation of air traffic and lead to subsequent mid-air collisions.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in the AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this AD, contact Aviation Communication & Surveillance Systems, LLC, 19810 North 7<sup>th</sup> Avenue, Phoenix, Arizona 85027-4741; phone: 623-445-7040; fax: 623-445-7004; e-mail: [acss.orderadmin@L-3com.com](mailto:acss.orderadmin@L-3com.com); Internet: <http://www.acss.com>. You may review copies

of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Abby Malmir, Aerospace Engineer, Systems and Equipment Branch, ANM-130L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: 562-627-5351; fax: 562-627-5210; e-mail: [abby.malmir@faa.gov](mailto:abby.malmir@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Discussion**

We issued a supplemental notice of proposed rulemaking (SNPRM) to amend 14 CFR part 39 to include an airworthiness directive (AD) that would apply to the specified products. That SNPRM was published in the Federal Register on October 7, 2011 (76 FR 62321). The original NPRM (75 FR 81512, December 28, 2010) proposed to require upgrading software. The SNPRM proposed to require new updated software for certain TCAS units.

## **Comments**

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

### **Request to Allow TCAS 7.1 Modification**

UPS, Qantas, and Dassault requested that we allow the TCAS 7.1 modification (as an alternative to the modification specified in the proposed AD) as an acceptable method of compliance with the proposed AD, since the 7.1 modification incorporates the intent of the proposed AD. The commenters reported that the European Aviation Safety Agency (EASA) has proposed rulemaking to mandate the 7.1 modification for airplanes operating in European airspace (EASA Notice of Proposed Amendment 2010-03, dated March 25, 2010). The requirements of the FAA and EASA rules therefore could overlap: an airplane equipped with the 7.1 modification in compliance with the EASA rule would require an alternative method of compliance (AMOC) to be in compliance with the FAA AD. The commenters concluded that, if the 7.1 modification were allowed in the FAA AD, these affected ACSS TCAS computers would need to be modified only once and would still be in compliance with both FAA and EASA rules. Dassault noted that ACSS is developing service bulletins to provide procedures for upgrading to the 7.1 standard.

We disagree to change this final rule to also allow the version 7.1 modification for all TCAS products. ACSS has not developed all software versions that implement the 7.1 standard for all affected TCAS units and airplane models covered by this AD, so there is no complete list of service information available that includes the procedures and information for incorporating the 7.1 modification. Because additional changes will likely be added in the future, additional software versions with different part numbers will be produced, and it will be necessary to issue AMOCs to accommodate requests to install such future software versions. Under the provisions of paragraph (i) of this final

rule, we will consider requests for an alternative method of compliance with the AD requirements to allow different software versions.

### **Request to Extend Compliance Time**

UPS requested that we reinstate the 48-month compliance time, as originally proposed, to accommodate the extent of the work necessary to comply with the proposed AD — including updating the fleet supplemental type certificates (STCs), and changing affected maintenance programs. Qantas noted that reducing the compliance time from 48 to 36 months will affect U.S. operators and also affect airplanes operating outside the U.S. Qantas stated many operators will choose the option to do the modification off-wing (a burden on authorized workshops due to the number of affected airplanes), and this will affect U.S. operators' ability to comply with the reduced compliance time.

We disagree to change the compliance time for several reasons. Since the original NPRM was issued, we have received a report that another “Altitude Failure Annunciation” occurred. We had based the proposed 36-month compliance time on the anticipated availability of the corrective action by December 2011, and determined that the compliance time change was necessary to address the identified unsafe condition. ACSS has completed the development of the software modification for fixing this anomaly for all the TCAS models and has received FAA approval. Therefore, since the modification involves only a software change, we have determined that 36 months is sufficient to complete the requirements of the AD. We have not changed the final rule regarding this issue. Under the provisions of paragraph (i) of the final rule, however, we may consider requests to adjust the compliance time if data are submitted to substantiate that such an adjustment would provide an acceptable level of safety.

### **Request to Revise Cost Estimate**

Qantas suggested that we consider additional factors that could increase the cost estimate for operators that choose to do the modification off-wing in a workshop.

We infer that Quantas is requesting that we revise the cost estimate provided in the proposed AD. We disagree. Based on available data, the manufacturer provided the number of work-hours necessary to do the required actions. This number represents the time necessary to perform only the actions actually required by this AD. We recognize that, in doing the actions required by an AD, operators might incur incidental costs in addition to the direct costs. The cost analysis in AD rulemaking actions, however, typically does not include the additional costs, which might vary significantly among operators and are almost impossible to calculate. We have not changed the final rule regarding this issue.

#### **Explanation of Change to this AD**

We have revised paragraph (c) of this AD to clarify the document reference specified in that paragraph.

#### **Conclusion**

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the change described previously.

#### **Costs of Compliance**

We estimate that this AD affects 9,000 airplanes of U.S. registry. We estimate the following costs to comply with this AD:

<b>Estimated costs</b>				
<b>Action</b>	<b>Labor cost</b>	<b>Parts cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Software upgrade	2 work-hours X \$85 per hour = \$170	\$2,870	\$3,040	\$27,360,000

#### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator.

Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **Adoption of the Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

## **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**2012-02-08 Aviation Communication & Surveillance Systems, LLC:** Amendment 39-16931; Docket No. FAA-2010-1204; Directorate Identifier 2010-NM-147-AD.

#### **(a) Effective Date**

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to Aviation Communication & Surveillance Systems (ACSS) traffic alert and collision avoidance system (TCAS) units with part numbers identified in ACSS Technical Newsletter 8008359, Revision B, dated August 3, 2011, as installed on but not limited to various transport and small airplanes, certificated in any category.

Note 1 to paragraph (c) of this AD: Table 1 of this AD also provides a cross-referenced list of part numbers with associated service bulletins to help operators identify affected parts.

**Table 1 – Service bulletin and LRU cross-reference**

<b>ACCS Product -</b>	<b>Affected LRU Part Numbers (P/Ns) -</b>	<b>ACSS Service Bulletin -</b>
TCAS 3000SP	9003500-10900, -10901, -10902, -55900, -55901, -55902, -57901, -65900, -65901, -65902	8008221-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6014)

<b>ACCS Product -</b>	<b>Affected LRU Part Numbers (P/Ns) -</b>	<b>ACSS Service Bulletin -</b>
TCAS 3000SP	9003500-10001, -10002, -10003, -10004, -55001, -55002, -55003, -55004, -65001, -65002, -65003, -65004	8008222-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6015)
TCAS 3000SP	9003500-10802	8008223-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6016)
TCAS 2000	7517900-10003, -10004, -10006, -10007, -10011, -55003, -55004, -55006, -55007, -55009, -55011, -71003, -71004, -71006, -71007, -71011	8008229-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 7517900-34-6040)
TCAS II	4066010-910, -912	8008230-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 4066010-34-6036)
Military TCAS 2000	7517900-56101, -56102, -56104, -56105, 56107	8008231-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 7517900-34-6041)
T2CAS	9000000-10002, -10003, -10004, -10005, -10006, -10008, -10204, -10205, -10206, -10208, -20002, -20003, -20004, -20005, -20006, -20008, -20204, -20205, -20206, -20208, -55002, -55003, -55004, -55005, -55006, -55008, -55204, -55205, -55206, -55208	8008233-001, Revision 03, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6016)
T2CAS	9000000-10110, -11111	8008234-001, Revision 02, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6017)
TCAS 3000	9003000-10001, -10002, -10003, -55001, -55002, -55003, -65001, -65002, -65003	8008235-001, Revision 02, dated February 3, 2011 (ATA Service Bulletin 9003000-34-6006)
Military TCAS 2000 MASS	7517900-20001, -20002, -65001, -65002	8008236-001, Revision 03, dated June 30, 2011 (ATA Service Bulletin 7517900-34-6042)
Military T2CAS MASS	9000000-30006, -40006, -60006	8008238-001, Revision 02, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6018)



**(d) Subject**

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 34, Navigation.

**(e) Unsafe Condition**

This AD was prompted by reports of anomalies with TCAS units during a flight test over a high density airport. The TCAS units dropped several reduced surveillance aircraft tracks because of interference limiting. We are issuing this AD to prevent TCAS units from dropping tracks, which could compromise separation of air traffic and lead to subsequent mid-air collisions.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Upgrade Software**

Within 36 months after the effective date of this AD, upgrade software for the ACSS TCAS, in accordance with the Accomplishment Instructions of the applicable ACSS publication identified in table 1 of this AD.

Note 2 to paragraph (g) of this AD: ACSS Service Bulletin 8008233-001 (ATA Service Bulletin 9000000-34-6016), Revision 03, dated June 30, 2011, contains three part numbers (P/Ns 9000000-10007, -20007, and -55007) that were never produced.

**(h) Credit for Actions Done in Accordance With Previous Service Information**

A software upgrade done before the effective date of this AD in accordance with the applicable service bulletin identified in paragraphs (h)(1) through (h)(13) of this AD is acceptable for compliance with the requirements of paragraph (g) of this AD.

(1) ACSS Service Bulletin 8008221-001 (ATA Service Bulletin 9003500-34-6014), dated May 27, 2010.

(2) ACSS Service Bulletin 8008222-001 (ATA Service Bulletin 9003500-34-6015), dated May 27, 2010.

(3) ACSS Service Bulletin 8008223-001 (ATA Service Bulletin 9003500-34-6016), dated May 27, 2010.

(4) ACSS Service Bulletin 8008229-001 (ATA Service Bulletin 7517900-34-6040), Revision 01, dated September 30, 2010.

(5) ACSS Service Bulletin 8008230-001 (ATA Service Bulletin 4066010-34-6036), Revision 01, dated February 1, 2011.

(6) ACSS Service Bulletin 8008231-001 (ATA Service Bulletin 7517900-34-6041), Revision 01, dated October 15, 2010.

(7) ACSS Service Bulletin 8008233-001 (ATA Service Bulletin 9000000-34-6016), Revision 02, dated February 1, 2011.

(8) ACSS Service Bulletin 8008234-001 (ATA Service Bulletin 9000000-34-6017), Revision 01, dated February 1, 2011.

(9) ACSS Service Bulletin 8008235-001 (ATA Service Bulletin 9003000-34-6006), dated June 4, 2010.

(10) ACSS Service Bulletin 8008236-001 (ATA Service Bulletin 7517900-34-6042), dated May 27, 2010.

(11) ACSS Service Bulletin 8008236-001 (ATA Service Bulletin 7517900-34-6042), Revision 02, dated February 1, 2011.

(12) ACSS Service Bulletin 8008238-001 (ATA Service Bulletin 9000000-34-6018), dated June 4, 2010.

(13) ACSS Service Bulletin 8008238-001 (ATA Service Bulletin 9000000-34-6018), Revision 01, dated February 1, 2011.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal

inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Abby Malmir, Aerospace Engineer, Systems and Equipment Branch, ANM-130L, FAA, Los Angeles Aircraft Certification Office (ACO), 3960 Paramount Boulevard, Lakewood, California 90712-4137; phone: 562-627-5351; fax: 562-627-5210; e-mail: [abby.malmir@faa.gov](mailto:abby.malmir@faa.gov).

**(k) Material Incorporated by Reference**

(1) You must use the following service information to do the actions required by this AD, unless the AD specifies otherwise. The Director of the Federal Register approved the incorporation by reference (IBR) of the following service information under 5 U.S.C. 552(a) and 1 CFR part 51:

(i) ACSS Service Bulletin 8008221-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6014).

(ii) ACSS Service Bulletin 8008222-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6015).

(iii) ACSS Service Bulletin 8008223-001, Revision 01, dated February 4, 2011 (ATA Service Bulletin 9003500-34-6016).

(iv) ACSS Service Bulletin 8008229-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 7517900-34-6040).

(v) ACSS Service Bulletin 8008230-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 4066010-34-6036).

(vi) ACSS Service Bulletin 8008231-001, Revision 02, dated June 28, 2011 (ATA Service Bulletin 7517900-34-6041).

(vii) ACSS Service Bulletin 8008233-001, Revision 03, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6016).

(viii) ACSS Service Bulletin 8008234-001, Revision 02, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6017).

(ix) ACSS Service Bulletin 8008235-001, Revision 02, dated February 3, 2011 (ATA Service Bulletin 9003000-34-6006).

(x) ACSS Service Bulletin 8008236-001, Revision 03, dated June 30, 2011 (ATA Service Bulletin 7517900-34-6042).

(xi) ACSS Service Bulletin 8008238-001, Revision 02, dated June 30, 2011 (ATA Service Bulletin 9000000-34-6018).

(xii) ACSS Technical Newsletter 8008359, Revision B, dated August 3, 2011.

(2) For service information identified in this AD, contact Aviation Communication & Surveillance Systems, LLC, 19810 North 7<sup>th</sup> Avenue, Phoenix, Arizona 85027-4741; phone: 623-445-7040; fax: 623-445-7004; e-mail: [acss.orderadmin@L-3com.com](mailto:acss.orderadmin@L-3com.com); Internet: <http://www.acss.com>.

(3) You may review copies of the service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

(4) You may also review copies of the service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information

on the availability of this material at an NARA facility, call 202-741-6030, or go to  
[http://www.archives.gov/federal\\_register/code\\_of\\_federal\\_regulations/ibr\\_locations.html](http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html).

Issued in Renton, Washington, on January 17, 2012.

Ali Bahrami,  
Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

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